

II. Amendments to the Claims

This listing of claims replaces without prejudice all prior versions and listings of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended) A water treatment ultraviolet radiation sensor device for detecting ultraviolet radiation from a plurality of submerged ultraviolet radiation sources disposed in a predefined arc around the sensor device in a radiation field, the device comprising:

a solid radiation collector having a longitudinal axis disposed substantially parallel to longitudinal axes of the plurality of submerged ultraviolet radiation sources, said solid radiation detector having an end portion disposed on the collector longitudinal axis, said radiation collector end portion being configured to (i) receive ultraviolet radiation from the plurality of submerged ultraviolet radiation sources disposed in the predefined arc around the collector ~~sensor device~~ within the radiation field, and (ii) redirect the received radiation along a predefined pathway substantially

parallel to said solid radiation collector longitudinal axis,
~~said radiation collector having a polygonal cross section;~~ and
a sensor element configured to detect and respond to
radiation along the pathway.

Claim 2 (Previously Presented) The sensor device
defined in claim 1, wherein the predefined arc comprises a
substantially 360° arc.

Claim 3 (Previously Presented) The sensor device
defined in claim 1, wherein the predefined arc comprises at
least one arc less than 360°.

Claim 4 (Previously Presented) The sensor device
defined in claim 1, wherein the predefined arc comprises two or
more independent arcs less than 360°.

Claim 5 (Currently Amended) The sensor device
defined in claim 1, wherein the radiation collector end portion
comprises a ~~distal~~ surface having a generally concave shape and
further comprises a reflective surface to reflect the incident
radiation along the pathway.

Claim 6 (Currently Amended) The sensor device defined in claim 1, wherein the radiation collector end portion comprises a ~~distal~~ surface having a generally convex shape which refracts and reflects the incident radiation along the pathway.

Claim 7 (Previously Presented) The sensor device defined in claim 1, wherein the radiation collector is directly mounted to the sensor element.

Claim 8 (Currently Amended) The sensor device defined in claim 1, wherein the radiation collector is remote from the sensor element.

Claim 9 (Cancelled)

Claim 10 (Previously Presented) The sensor device defined in claim 1, wherein the radiation collector has a generally circular cross-section.

Claim 11 (Currently Amended) A water treatment ultraviolet radiation source module comprising:

a frame having a first support member and configured to be disposed in water;

at least one radiation source assembly extending from and in engagement with said first support member, the at least one radiation source assembly comprising (i) at least one ultraviolet radiation source having a longitudinal axis, and (ii) a radiation sensor device, said radiation sensor device comprising:

a solid radiation collector having a longitudinal axis substantially parallel the radiation source longitudinal axis, said solid radiation collector having an end portion disposed on said radiation collector longitudinal axis, said radiation collector end portion being configured to (i) receive ultraviolet radiation from a plurality of ultraviolet radiation sources disposed in the water in a predefined arc around the collector end portion, and ~~to~~ (ii) redirect the received ultraviolet radiation along a predefined pathway substantially parallel to said radiation collector longitudinal axis; and

a sensor element configured to detect and respond to the ultraviolet radiation redirected along the pathway.

Claim 12 (Original) The radiation source module defined in claim 11, wherein the predefined arc comprises a substantially 360° arc.

Claim 13 (Original) The radiation source module

defined in claim 11, wherein the predefined arc comprises at least one arc less than 360°.

Claim 14 (Original) The radiation source module defined in claim 11, wherein the predefined arc comprises two or more independent arcs less than 360°.

Claim 15 (Previously Presented) The radiation source module defined in claim 11, wherein said at least one ultraviolet radiation source is disposed within a protective sleeve.

Claim 16 (Currently Amended) The radiation source module defined in claim 11, wherein the radiation collector end portion comprises a ~~distal~~ surface having a generally concave shape and further comprises a reflective surface to reflect the incident radiation along the pathway.

Claim 17 (Currently Amended) The radiation source module defined in claim 11, wherein the radiation collector end portion comprises a ~~distal~~ surface having a generally convex shape which refracts and reflects the incident radiation along the pathway.

Claim 18 (Previously Presented) The radiation source module defined in claim 11, wherein the radiation collector is directly mounted to the sensor element.

Claim 19 (Previously Presented) The radiation source module defined in claim 11, wherein the radiation collector is remote from the sensor element.

Claim 20 (Previously Presented) The radiation source module defined in claim 11, wherein the radiation collector has a polygonal cross-section.

Claim 21 (Previously Presented) The radiation source module defined in claim 11, wherein the radiation collector has a generally circular cross-section.

22. (Currently Amended) A water treatment ultraviolet radiation source assembly comprising:

a protective sleeve configured to be disposed in the water to be treated, said protective sleeve containing:

(i) at least one ultraviolet radiation source configured to treat the water and having a longitudinal axis,
and

(ii) a radiation sensor device configured to detect ultraviolet radiation in a field in the water to be treated, the sensor device comprising:

a solid radiation collector having a longitudinal axis substantially parallel the radiation source longitudinal axis, said solid radiation collector having a distal portion disposed on said radiation collector longitudinal axis, said radiation collector distal portion being configured to (i) receive ultraviolet radiation from a predefined arc around the distal portion collector within the field, and (ii) redirect the received ultraviolet radiation along a predefined pathway substantially parallel to said radiation collector longitudinal axis; and

a sensor element configured to detect and respond to the ultraviolet radiation along the pathway.

Claim 23 (Original) The radiation source assembly defined in claim 22, wherein the predefined arc comprises a substantially 360° arc.

Claim 24 (Original) The radiation source assembly defined in claim 22, wherein the predefined arc comprises at least one arc less than 360°.

Claim 25 (Original) The radiation source assembly defined in claim 22, wherein the predefined arc comprises two or more independent arcs less than 360°.

Claim 26 (Currently Amended) The radiation source assembly defined in claim 22, wherein the radiation collector ~~comprises a distal~~ portion has ~~surface having~~ a generally concave shape and further comprises a reflective surface to reflect the incident radiation along the pathway.

Claim 27 (Currently Amended) The radiation source assembly defined in claim 22, wherein the radiation collector ~~comprises a distal~~ portion has ~~surface having~~ a generally convex shape which refracts and reflects the incident radiation along the pathway.

Claim 28 (Previously Presented) The radiation source assembly defined in claim 22, where the radiation collector is directly mounted to the sensor element.

Claim 29 (Previously Presented) The radiation source assembly defined in claim 22, wherein the radiation collector is remote from the sensor element.

Claim 30 (Previously Presented) The radiation source assembly defined in claim 22, wherein the radiation collector has a polygonal cross-section.

Claim 31 (Previously Presented) The radiation source assembly defined in claim 22, wherein the radiation collector has a generally circular cross-section.

Claim 32 (Currently Amended) An ultraviolet water treatment system comprising:

an array of ultraviolet radiation sources configured to generate a field of ultraviolet radiation in the water to be treated, each radiation source having a longitudinal axis, the array of ultraviolet radiation sources further comprising:

a radiation sensor device configured to detect ultraviolet radiation in the field of ultraviolet radiation in the water to be treated, the sensor device comprising:

a solid radiation collector having a longitudinal axis substantially parallel the radiation source longitudinal axes, said solid radiation collector having a distal portion disposed on said radiation collector longitudinal axis, said radiation collector distal portion being configured to (i) receive ultraviolet radiation from a predefined arc around the collector distal portion within the field of

ultraviolet radiation in the water to be treated, and (ii) redirect the received ultraviolet radiation along a predefined pathway substantially parallel to said radiation collector longitudinal axis; and

a sensor element configured to detect and respond to the redirected ultraviolet radiation along the pathway.

Claim 33 (Original) The fluid treatment system defined in claim 32, wherein the predefined arc comprises a substantially 360° arc.

Claim 34 (Original) The fluid treatment system defined in claim 32, wherein the predefined arc comprises at least one arc less than 360°.

Claim 35 (Original) The fluid treatment system defined in claim 32, wherein the predefined arc comprises two or more independent arcs less than 360°.

Claim 36 (Currently Amended) The fluid treatment system defined in claim 32, wherein the radiation collector ~~comprises a distal portion~~ has surface having a generally

concave shape and further comprises a reflective surface to reflect the incident radiation along the pathway.

Claim 37 (Currently Amended) The fluid treatment system defined in claim 32, wherein the radiation collector ~~comprises a distal portion has surface having~~ a generally convex shape which refracts and reflects the incident radiation along the pathway.

Claim 38 (Previously Presented) The fluid treatment system defined in claim 32, wherein the radiation collector is directly mounted to the sensor element.

Claim 39 (Previously Presented) The fluid treatment system defined in claim 32, wherein the radiation collector is remote from the sensor element.

Claim 40 (Previously Presented) The fluid treatment system defined in claim 32, wherein the radiation collector has a polygonal cross-section.

Claim 41 (Previously Presented) The fluid treatment system defined in claim 32, wherein the radiation collector has a generally circular cross-section.

Claim 42 (New) The fluid treatment system defined in claim 1, wherein the radiation collector has a polygonal cross-section.